

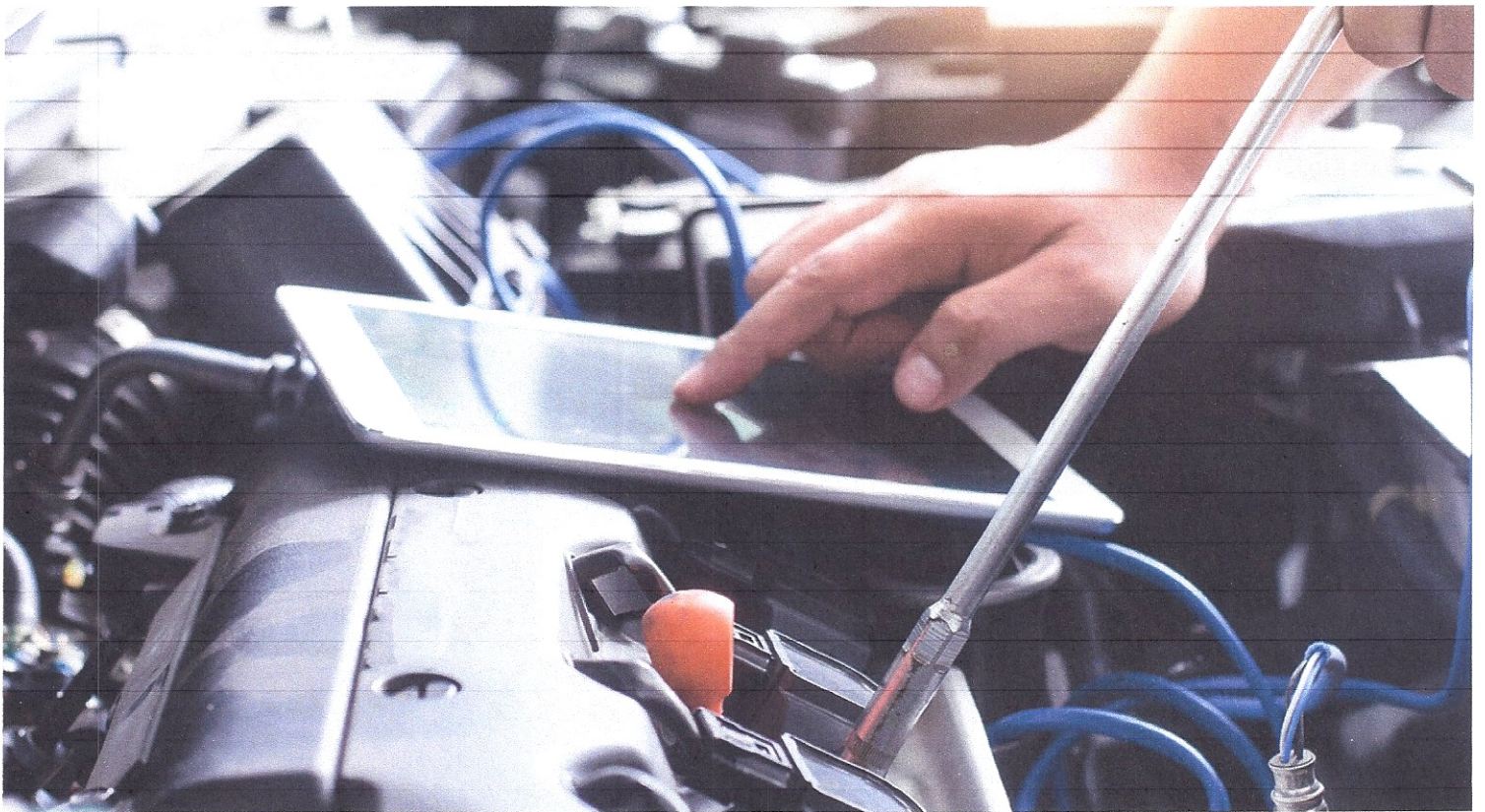
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# What GM'S Layoffs Reveal About the Digitalization of the Auto Industry

by Mark Muro and Robert Maxim

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News that General Motors plans to cut up to 14,800 jobs in the U.S. and Canada was initially reported as a conventional business-cycle adjustment – a “trimming of the sails.” The main causes of the cuts were understood to be slowing demand in the U.S. and China, slumping demand for sedans, and the need to reduce over-capacity in North America.

Then the story turned political, as President Trump lashed out at GM while some observers framed the news as a blow to the president’s promises to bring jobs back to the U.S. heartland.

And then others focused on the community disruption of plant closings in the Rust Belt and how it might be mitigated.

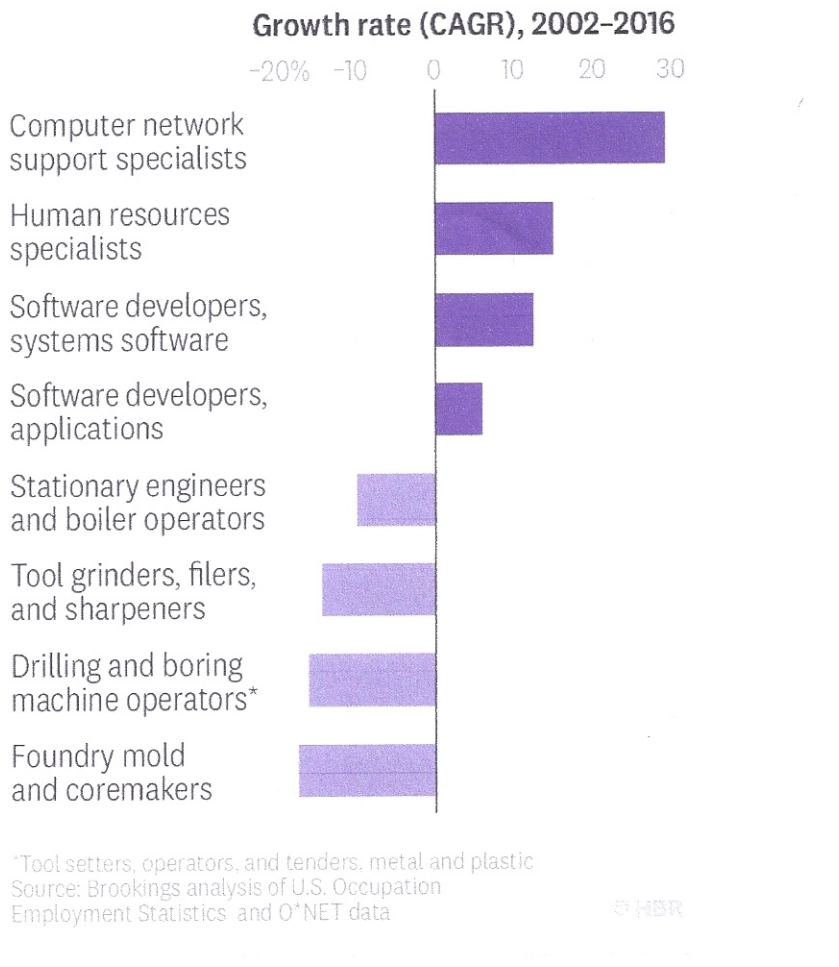
While all of those perspectives are relevant, the most revealing aspect of GM’s announcement may well be what the layoffs say about broader technology trends. GM’s layoffs are not just incremental but existential, in that sense: They are about accelerating the staffing changes mandated by the company’s aggressive transition from analog to digital products and from gasoline to electric power. As such, the new layoffs (and associated future hirings) are likely an augury of much more disruption coming – in the auto sector, for sure, but also in firms all across the economy.

Central to GM’s announcement is, in our view, what we call the “digitalization of everything.” By that, we mean that GM’s layoffs significantly reflect the talent and workforce strains associated with the diffusion of digital and electronic technologies into nearly every industry, business, and workplace in America.

Specifically, the advent of consumer electronics, IT, electric and battery powered drivetrains, and – soon – autonomy in the automotive industry are placing excruciating new demands on its workforce, and forcing painful change. Where once the auto-sector workforce was anchored by workers responsible for mechanical and machine-maintenance roles, the need for electrical skills is now growing exponentially due to the increasing electrical and electronic content of the car. Likewise, where mechanical engineers once predominated, the original equipment manufacturers (OEMs) are increasingly looking for software engineers, energy management experts, and data scientists able to build electric and self-driving vehicles.

Our recent analysis of the digital content of hundreds of occupations in the American economy shows that the digital content of auto work has soared in the last 15 years, with huge implications for workforce development in the sector. The mean digitalization score of workers in the advanced manufacturing sector, of which auto is a part, surged 60%, from 24 to 39 since 2002. This has reoriented the occupational mix of the industry, changing its hiring needs and layoff decisions. As of 2016, for example, the fastest growing occupations in the auto sector were computer network support specialists and software developers while two of the fastest shrinking were drilling and boring machine operators and sheet metal workers. Similar patterns of cutting and hiring are visible in last week's announcement.

# Auto Sector Occupations That Are (and Aren't) Growing

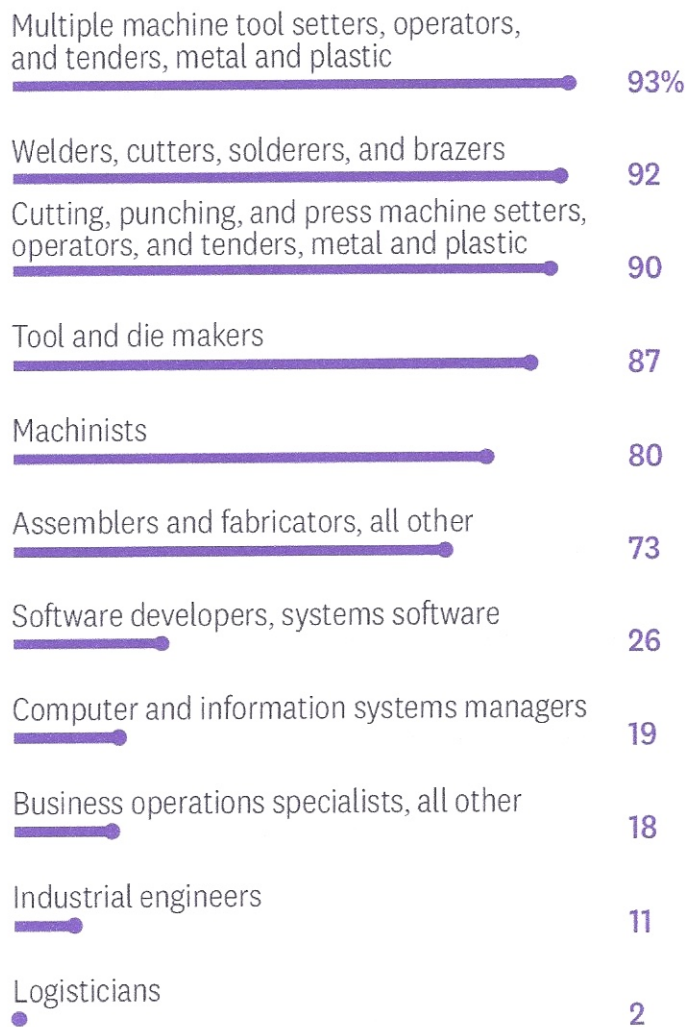


Nor is that all: Look for more of the same in the future – from GM, and from all other companies in the sector. According to our calculations, employing task-level work assessments provided by the McKinsey Global Institute, nearly 65% of all auto-sector jobs have task-level automation potentials of at least 70% in the next 10 or 15 years, meaning they are potentially susceptible to significant work changes, if not termination. With that

said, as one of GM’s statements last week noted, “GM’s transformation also includes adding technology and engineering jobs to support the future of mobility, such as new jobs in electrification and autonomous vehicles.”

## Auto Sector Occupations Most (and Least) Likely to Be Automated

### Potential for automation (%)



Source: Brookings analysis of McKinsey Global Institute Data © HBR

In that vein, last week's layoffs surely were a response to changing near-term market conditions. But beyond that, the cuts went much deeper, to respond to massive, technology-driven changes in the nature of the work at hand.

As to what needs to be "done" about these transitions, the proper response almost certainly bears no resemblance to any of the ideas President Trump offered last week. Trump is fuming at the plant closures, and appears to want to reverse the actions GM is taking to stay ahead of emerging technology and skills changes. To that end, Trump called on GM to close one of its plants in China. And he threatened to strip the company of modest federal incentives to stimulate electric car production. However, that would only hurt GM's and America's competitiveness by hindering the company's plans to invest more in the technology and people needed to produce electric and self-driving cars as those become viable products.

What should be done instead? As a nation, we should be embracing transformative technology and its widespread deployment whether it be electrification and hyper-efficient batteries in the auto sector or automation and AI more broadly. Likewise, we should be increasing our investments in education and workforce training (and re-training), with a focus on digital skills. Only in that way will workers be able to ride out the coming waves of tech-driven staffing changes. And finally, the nation needs to do much more to provide basic supports for people and places struggling with the harsh impacts of labor market change. To be sure, workers must adapt, but firms, governments, and regions all have a responsibility to help.

All of which is to say: GM's announcement of layoffs last week is much more than a routine course-adjustment by a company alert to market softening after a good run. Rather, it's a wake-up call about the labor market implications of the "digitalization of everything."

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